UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

SEP 11 2002

Clifford Lyle Marshall, Chairman
Hoopa Valley Tribal Council
Post Office Box 1348
Hoopa, CA 95546

Dear Mr. Marshall,

The Environmental Protection Agency (EPA) is hereby approving the Water Quality Control Plan for the Hoopa Valley Indian Reservation (Plan), with the exception of the tributary temperatures and turbidity criteria which were withdrawn. The Hoopa Valley Tribal Council adopted the plan on December 6, 2001, and withdrew the tributary temperature and turbidity criteria on May 10, 2002. EPA has reviewed the portions of the Plan (Chapters 2 and 3) related to water quality standards, consisting of beneficial uses, water quality criteria, and an antidegradation policy. The tribe also submitted relevant provisions of the Implementation Plan (Chapter 4), and, pursuant to 40 CFR § 131.13, EPA has reviewed and is approving those provisions. EPA's approval is based on our finding that the adopted Plan is consistent with the requirements of Section 303(c) of the Clean Water Act (CWA) and EPA's implementing regulations at 40 CFR 131. The detailed basis for EPA's approval can be found in the attached Decision Memorandum.

EPA commends the Tribe for the substantial work effort involved in developing its Water Quality Control Plan. EPA has been an active observer of the Trinity River Fishery Restoration Program Flow Evaluation Study conducted over the past two decades by the USFWS, the Hoopa Valley Tribe and others. Although that Trinity River Flow Study has different goals and objectives under the Trinity River Fishery Restoration Program, the analyses underlying the Flow Study provide a substantial scientific basis for many of the provisions in the Water Quality Control Plan.

EPA compliments the Tribe on including the public in the development and review of new and revised water quality standards. Such involvement on the part of the public is an integral component of a successful water quality program. EPA finds that the public participation procedures followed by the Tribe in the development and adoption of the Plan are consistent with the procedural requirements of 40 CFR 25.

Pursuant to § 7 of the Endangered Species Act (ESA), EPA is required to consult with the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) about potential effects on threatened and endangered species by water quality standards

actions under § 303(c)(3) of the CWA. Additionally, pursuant to a Memorandum of Agreement (MOA) executed amongst the EPA, the USFWS and the NMFS (66 FR 11202, February 22, 2001) we carried out early informal consultation as set forth in the MOA. Based on a biological evaluation submitted to the Services on June 7, 2002, EPA found that EPA's approval of this Plan will not be likely to adversely affect threatened or endangered species or their designated critical habitat. Concurrences with this finding were sent to EPA by USFWS on July 3, 2002 for the Bald eagle, and by NMFS on July 16, 2002 for the Coho salmon. Copies of the biological evaluation and Service concurrences have previously been provided to your office.

Chapter 2: Beneficial Uses

Pursuant to 40 CFR 131.10(a), each State or Tribe must specify appropriate water uses to be achieved and protected. The classification of the waters must take into consideration the use and the value of water for public water supplies, protection and propagation of fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. EPA finds that the adopted beneficial uses are appropriate for the identified waterbodies and approves the beneficial uses as being in accordance with 40 CFR 131.

Chapter 3: Water Quality Criteria

Pursuant to 40 CFR 131.11(a), States and Tribes must adopt those water quality criteria that protect the designated use of the waterbody. Such criteria must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the designated use. For waters with multiple use designations, the criteria shall support the most sensitive use.

Numeric Criteria: EPA hereby approves the Priority Pollutants as they are consistent with the California Toxics Rule (CTR) and thus with the adjoining waters of the Trinity River under the jurisdiction of the Northern Coastal California Regional Water Quality Control Board (RB1).

Specific Use Criteria: EPA hereby approves the specific use criteria and finds that the proposed specific use criteria, including ammonia, bacteria, dissolved oxygen and total dissolved gas are consistent with EPA guidance. Temperature criteria are considered separately, because of the complex nature of seasonal criteria. Temperature Criteria for the Trinity River Mainstem are established on the best available science. EPA approves those Temperature Criteria based on our review as discussed in the Decision Memorandum attachment.

Other Comments Related to the Plan Water Quality Standards

EPA understands that reaches of the Mainstem Trinity River upstream of the Hoopa Reservation are subject to the jurisdiction of California's Regional Water Quality Control Board Region 1 (RB1). EPA's regulations at 40 CFR 131.7 provide for a dispute resolution process where inconsistent standards apply to the same water body. At this time, however, EPA is not aware of any inconsistencies in the regulatory programs adopted by the Tribe and the RB1, and understands that the Tribe has been working closely with RB1. EPA commends the Tribe for its continuing outreach and cooperation with the neighboring California regulatory agencies.

EPA intends to continue to work closely with the Hoopa Valley Tribe during the next triennial review. Our aim is to be able to take prompt action on any amendments as well as to provide the

Tribe with appropriate assistance. Coordination between EPA and the Services is ongoing and we anticipate that CWA/ESA issues concerning the Plan will be identified and raised during the next triennial review. We also encourage early dialogue between EPA, the Tribe, RB1 and the Services to identify and resolve water quality standards issues. Once again, EPA commends the Hoopa Valley Tribe for its diligent efforts in developing the Plan. If there are any questions regarding this action, please call me at (415) 972-3572 or have your staff contact Suesan Saucerman of the CWA Standards and Permits Office at (415) 972-3522. As always, EPA looks forward to continued cooperation with the Tribe in achieving our mutual environmental goals.

Sincerely,

Alexis Strauss 11 Sept. 2002

Alexis Strauss, Director
Water Division

CC: Ranjit Gill, Northern Coastal California Water Quality Control Board

Susan Masten, Yurok Tribe

Sandi Tripp, Karuk Tribe of California

ATTACHMENT

Decision Memorandum on EPA approval of The Hoopa Valley Tribal Water Quality Control Plan

Beneficial Uses

The table of surface water bodies and designated beneficial uses includes 14 water bodies, six of which are entirely on the Hoopa Valley Reservation and eight of which cross boundaries with the Northern Coastal California Regional Water Quality Control Board (RB1).

All water bodies are designated as existing or potential municipal use (MUN), Water Contact Recreation (REC-1) and Non-Contact Recreation (REC-2), which together ensure the highest (most stringent) water quality objectives possible for human health criteria. As regards fish and wildlife, most water bodies on the reservation are designated for, where applicable:

Cold freshwater habitat (COLD): All water bodies on the Reservation are designated this use which includes uses of water that supports cold water ecosystems including but not limited to preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including invertebrates;

Wildlife Habitat (WILD): All water bodies on the Reservation are designated this use which provides a water supply and vegetative habitat for the maintenance of wildlife;

Preservation of Threatened and Endangered Species (T & E): Most water bodies, with the exceptions of Hospital Creek (historic use -- became unsuitable habitat after the highway was built in the 1950's), Hopkins Creek (historical use), Captain John Creek, Big Creek and Gibb Gulch (not applicable, these are small, high gradient streams which were never suitable for T&E species) are designated this use. This use provides an aquatic habitat necessary, at least in part, for the survival of certain species which are Federally and/or Tribally recognized as being threatened and/or endangered species;

Fish Migration (MGR): Most water bodies are designated this use, with the exceptions of Hospital Creek; (historic use), Captain John Creek and Big Creek (not applicable) and Gibb Gulch (historic MGR use for rainbow trout). This use provides a migration route and temporary aquatic environment for anadromous or other fish species; and

Fish Spawning (SPWN): Most water bodies on the Reservation are designated for this use with the exceptions of Hospital Creek (historic use), Captain John Creek and Big Creek (not applicable) and Gibb Gulch (historic SPWN use for rainbow trout). This use provides a high quality aquatic habitat especially suited for fish spawning.

EPA finds that the adopted beneficial uses are appropriate for the identified water bodies and approves the beneficial uses as being in accordance with 40 CFR 131.

Water Quality Criteria

1. Description of Water Quality Criteria

a. Priority Pollutants: Table 3.1: Priority Pollutant Listing for Aquatic Life and Table 3.2: The Priority Pollutant Listing for Human Health Criteria provides values that are consistent with protection of human health and aquatic life and with the California Toxics Rule (CTR), which have been previously approved by EPA for the State of California.

b. Specific Use Criteria: Sub-Chapter 3.5: Specific Uses: Where waters are designated with the beneficial uses of MUN, CUL (Cultural), T&E, COLD and SPWN, a list of criteria is presented which includes ammonia, bacteria, dissolved oxygen, inter-gravel oxygen, total dissolved gas and temperature.

Ammonia: The ammonia criteria listed are for the CMC (acute criterion) where salmonid fishes are present, and is dependent on the pH of the water body and the CCC (chronic criterion) where early life stages of fish are present and is dependent on pH and temperature of the water body. These criteria are consistent with the 1999 EPA Ambient Water Quality Criteria for Ammonia guidance.

Bacteria: the bacteria criteria of the geometric mean of the enterococci bacteria density of 33 per 100 milliliters and *E. coli* density of 126 CFU/100 ml are consistent with EPA's published *Ambient Water Quality for Bacteria* - 1986.

Dissolved Oxygen (DO)/Intergravel Oxygen: All waters on the Hoopa Reservation are "salmonid waters". The DO criteria of in excess of 11 mg/l for the water column and 8 mg/l for intergravel are consistent with EPA's 1986 criteria for no production impairment for embryo, larval and other salmonid life stages.

Total Dissolved Gas (TDG): The criteria for TDG "shall not exceed 110 percent of the saturation value for all gases at the existing atmospheric and hydrostatic pressures at any point of sample collection" are consistent with EPA (1986) criteria.

Temperature: Temperature objectives are divided into two sections: the Tributaries to the Mainstem Trinity River and the Mainstem Trinity River. The tributary temperature criteria were withdrawn on May 10, 2002, and will be considered when they are resubmitted.

Temperatures on the Mainstem Trinity River: The temperatures listed for the mainstem Trinity River in Table 3.1 of the Plan (Pg 42) are intended to be consistent with the temperatures outlined in the Trinity River Flow Evaluation

> Study Preferred Alternative (TRFE preferred alternative, included in the Trinity River fishery Restoration Project [TRFRP]), and are consistent with the temperatures that would result with implementation of the TRFE preferred alternative. These temperature standards are empirically derived and reflect conditions observed in the Trinity River over the last 10 years. The Water Quality Standards language in the Plan includes a goal of further lowering the temperatures over the next five years during the June to September 14th time period. Given this narrative goal, the current temperature criteria serve, in effect, as interim performance goals.

EPA recognizes that the dam and water diversion at Lewiston on the Trinity River resulted in low flows which have aided in causing high summer water temperatures, in conjunction with salmonid habitat modification. These high temperatures and habitat modification appear to have resulted in a shift of habitat use by salmonids using that portion of the Trinity River. The temperatures adopted by the Tribe are broken down into seasons and water-year types (extremely wet, wet and normal and dry and critically dry). The discussion below incorporates life history of salmonids in review of the temperature standards.

Spawning: Coho salmon spawn in the Trinity River from November through January. For this time period, the Plan lists a maximum (not to exceed) temperature of 13° C for extremely wet, wet and normal years and 15° C for dry and critically dry years for the Trinity River Mainstem (Table 3.1). Berman (1998), in her review of Oregon temperature standards, states:

> "Coho salmon spawning preferences of 4.4°C to 9.4°C (Reiser and Bjornn 1973, Brett 1952), 10°C to 12.8°C (Bell 1986), and 7.2°C to 12.8°C (Hicks 1998) have been recorded. The Independent Scientific Group (1996) provides temperature ranges for chinook salmon. However, the authors state that, "other salmon species are not markedly different in their requirements". They cite 10°C as the optimum spawning temperature with a range of 8°C to 13°C. Stressful conditions occur at temperatures greater than 15.6°C and lethal temperature effects occur at 21°C."

Because the temperatures are not to exceed 13°C and 15°C, the Tribe's temperature criteria remain protective of spawning coho salmon, though those temperatures are not optimal in all of the studies reviewed.

Before construction of the dam, coho salmon spawned above the Lewiston Dam where the temperatures were cooler (Paul Zedonis, Pers. Comm.). The U.S. Fish and Wildlife Service has found that coho salmon currently spawn on the Mainstem Trinity River only up between Lewiston and Douglas City, which is upstream of the Hoopa Reservation portion of the Mainstem Trinity River (Zedonis and Craig, Pers. Comm.). Otherwise, on the Hoopa Reservation, coho spawning occurs in the tributaries to the Trinity River. The National Marine Fisheries Service lists spawning times on the Trinity River and

tributaries to be from November through January, when temperatures are protective.

Incubation and emergence: Berman (1998) cites optimum incubation temperatures at 4.4°C to 13.3°C. The Independent Scientific Group's general salmonid criteria suggests temperatures for optimal incubation at less than 10°C with a range of 8°C to 12°C. They also cite lethal effects at greater than 15.6°C.

Incubation and emergence of coho salmon occurs from January through May on the Trinity River (FWS and HVT 1999), but not on the Mainstem Trinity River on the Hoopa Reservation (Zedonis, Pers. Comm). Rather, most spawning, incubation and emergence of coho salmon occurs further up the river near Lewiston and Douglas City and in the tributaries where the water temperatures are cooler (Zedonis, Pers. Comm.).

In the NMFS Biological Opinion for the TRFE preferred alternative, NMFS states:

> "From July through mid-October, the 450 CFS release in all water year classes would provide suitable micro habitat for rearing coho salmon as well as appropriate water temperatures needed to increase their expected survival, and in turn, production of coho salmon and steelhead (USFWS and HVT 1999)."

EPA has determined, based on available information, that the Tribe's temperature criteria during spawning, incubation and emergence periods for coho salmon, adequately protect the Southern Oregon Northern California Coast coho salmon populations, and hereby approves these criteria. Our approval, however, is based on the accuracy of information we have been provided regarding the presence and timing of coho salmon in this section of the Trinity. We urge the Tribe to continue monitoring coho life cycles during the next triennial review and to review and, if necessary, revise these criteria if new information yields a better understanding of these species in the river.

Smolt Out-Migration (smolts and smoltification): Smolt out-migration occurs February through early June on the Trinity River (USFWS HTV 1999). A review of temperature effects on smolts is given in Zedonis and Newcomb (1997) and discussed in USFWS and HVT (1999) along with temperature requirements. Three categories of thermal tolerance for salmonid smolts were identified in the Trinity River: optimal at 10°C to 15°C, marginal at 15°C to 17°C, and unsuitable (smolts will revert to parr or lose ability to hypoosmoregulate) at greater than 17°C.

In the Trinity River emigration of coho salmon smolts occurs from February through June, with 80-90% of the smolts passing through by June 4th (FWS and HVT 1999). The temperature criteria proposed in the HVTWQCP for these months are 13°C and 15°C in extremely wet, wet and normal years and 15°C and 17°C in dry and critically dry years.

EPA determines, based on available information, that the temperature criteria

proposed in the Tribe's Plan are protective of emigrating coho salmon smolts always during wet and normal years. In addition, we find the Tribe's temperature criteria in the dry and critically dry years to be protective, but note that these criteria appear to be at the upper end of the range of protective temperatures during these periods. We urge the Tribe to continue its evaluation of coho emigration so that the adequacy of these criteria can be carefully evaluated during the next triennial review.

Rearing (ages 0+ and 1+): Berman (1998) provides the following review of salmonid rearing temperatures. Rearing temperature preferences have been published for salmonids at 11.8°C to 14.6°C (Reiser and Bjornn 1973, Brett 1952, Beschta *et al.* 1987). Cessation of growth occurs at temperatures greater than 20.3°C, and Beschta *et al.* (1987) report an upper lethal temperature limit of 25.8°C. The Independent Scientific Group (1996) provides general recommendations for salmonid rearing with 15°C as the optimum with a range of 12°C to 17°C. Stressful conditions occur at temperatures equal to or greater than 18.3°C and lethal effects occur at 25°C.

Rearing coho salmon are in the Trinity River system during the entire year; age 0+ from February to December and age 1+ from January to March, before emigrating as smolts. The proposed temperatures in the HVTWQCP are protective for rearing salmonids from November through July in wet and normal years (13°C, 15°C and 17°C) and from November through June in dry and critically dry years (15°C and 17°C). The proposed temperature criteria for wet and normal years from July 10 to September 14 (22.1°C) and from September 15 to October 31 (19°C) are not protective of rearing salmonids. Likewise, for dry and critically dry years, the temperatures for June 5 to June 15 (20°C), June 16 to September 14 (23.5°C) and September 15 to October 31 (19°C) are not protective of rearing salmonids.

The temperature criteria for the summer months on the mainstem Trinity River are too high to be protective of migrating smolts and rearing coho salmon from June 5 through October 31 in the Mainstem Trinity River. However, data show that 80% - 90% of the emigrating smolts have passed through by June 4th (Zedonis and Newcomb, 1997, FWS and HVT 1999). Other studies indicate that ages 1+ and 0+ coho salmon are only incidently found in the mainstem in the summer months, most of the age 1+ and 0+ coho are in the tributaries where the temperatures are cooler (Paul Zedonis, Pers. Comm., Jim Craig, Pers. Comm., McLeod *et al.* 1999). Historically, before the river was dammed, temperatures on this stretch of the Trinity River were actually higher than the present temperature criteria, and rearing salmon remained in the upper reaches of the Trinity River, where the water was cooler. The dam prevents that option, so the rearing fishes tend to stay in the tributaries off the mainstem Trinity River (Zedonis, Pers. Comm., FWS and HVT 1999).

Based on this current understanding of coho responses to the temperature in the mainstem Trinity River and its local tributaries, EPA finds that the temperature criteria are protective of the designated use. We note that restoration measures detailed in the Trinity River Fishery Restoration Project and the Trinity River Flow Evaluation and

implementation measures detailed in the Hoopa Water Quality Control Plan taken over the next five years will aid in providing sufficient cold-water refugia and lowering the temperatures. Again, as above, EPA findings are based on the continued validity of the scientific observations and evaluations presently available. Given the critical importance of temperature to the protection of these designated uses, we urge the Tribe to revisit these criteria in the next triennial review as new information on salmonid behavior becomes available.

OTHER CONCERNS

Communications

During the last few years, EPA has received correspondence from third parties about the Tribe's proposed Water Quality Control Plan. One letter received by EPA in 1999 raised concerns about the public notice requirements for Plan adoption, and EPA believes that these concerns were addressed by the time the Tribe finalized its Plan in December 2001. Two other letters raised a number of legal concerns about the implementation of any water quality control plan. These letters were substantially identical to letters submitted to the Tribe during the public comment period, and the Tribe provided responses to these letters in its response to comments document. Given that the legal issues raised concerned implementation issues rather than issues about the standards themselves, EPA believes that this debate is premature.